

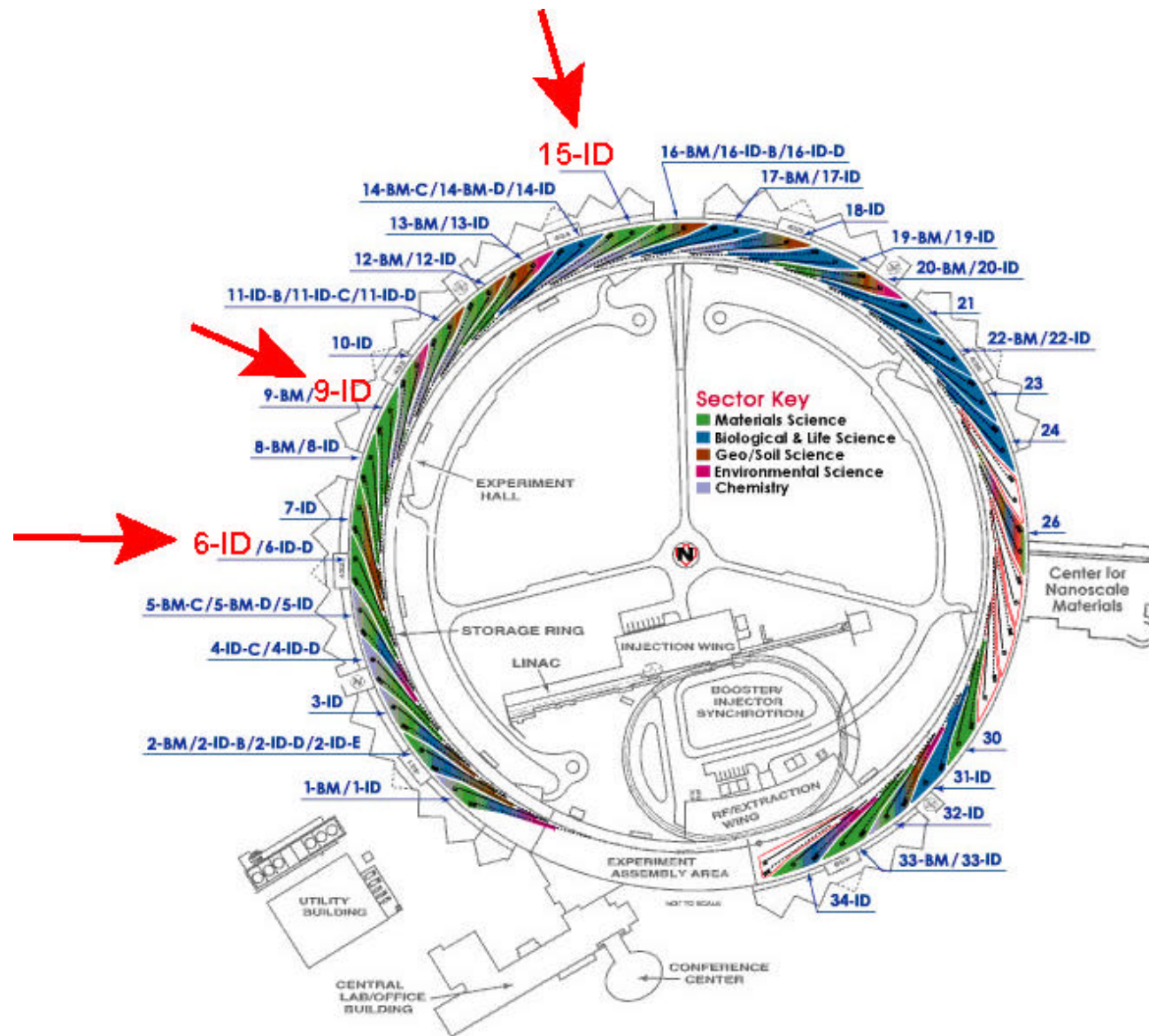
Liquid Surface Scattering at APS

Workshop 5

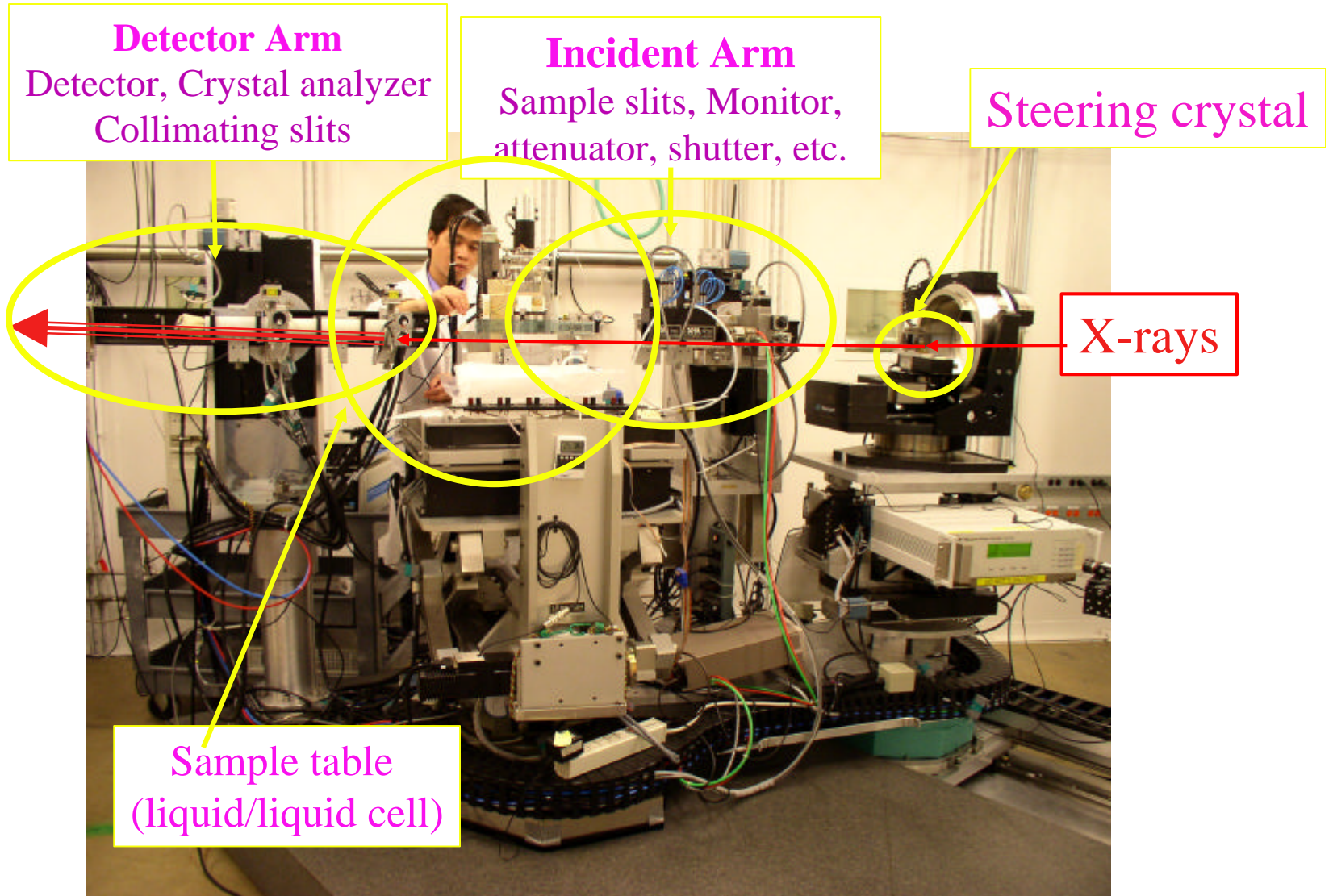
“Scattering from liquid surfaces and
interfaces”

May, 5, 2005

Dedicated Liquid Surface Instruments at APS



Liquid surface spectrometer at APS



General specs of three LSS beamlines

6-ID:

| Energy Range | Monochromator Type | Resolution | Flux | Beam Size (horiz x vert) | |
|--------------|--------------------|--------------------|-----------------------------|--------------------------|----------------------------|
| | | | | Unfocused | Focused |
| 3.2-38 keV | Si 111 | 1×10^{-4} | 7.1×10^{12} @8 keV | 1.5mm x .7mm | 1500 μ m x 150 μ m |

9-ID:

| Energy Range | Monochromator Type | Resolution | Flux | Beam Size (horiz x vert) | |
|--------------|--------------------|--------------------|------|--------------------------|---------------------------|
| | | | | Unfocused | Focused |
| 4.5-22.5 keV | Si 111 | 1×10^{-4} | | | 600 μ m x 200 μ m |
| 8.9-67.5 keV | Si 333 | 1×10^{-4} | | | 600 μ m x 200 μ m |

15-ID:

| Energy Range | Monochromator Type | Resolution | Flux | Beam Size (horiz x vert) | |
|--------------|--------------------|--------------------|------|--------------------------|-----------------------|
| | | | | Unfocused | Focused |
| 6-30 keV | Diamond 111 | 1×10^{-4} | | 2mm x .5mm | μ m x 200 μ m |

Surface Science on Liquids at APS

- **Surface structure of liquids (15-ID, 9-ID):**
liquid metals, binary organic mixtures, ionic liquids, liquid-liquid interfaces
- **Non-biological Langmuir films (15-ID, 6-ID, 9-ID)**
- **Biological Langmuir films (15-ID, 6-ID, 9-ID)**
- **Metal particles at air-liquid interfaces (15-ID):**
gold particles at air-water interface
- **Structure of buried interfaces (9-ID):**
organic films at mercury-silicon interface
- **Induced crystallization under Langmuir monolayers (6-ID)**
- **Geosciences (9-ID):**
clay colloids